SHINYBOW™ USA

MULTIMEDIA AUDIO AND VISUAL

INSTRUCTION MANUAL

MODEL : SB-5644

4x4 COMPONENT- AUDIO MATRIX SWITCHER

4x4 COMPONENT- AUDIO MATRIX SWITCHER

Component Matrix Switcher Series

Thank you for purchasing the SB-5644 Component-Audio Matrix Switcher. You will find this unit easy to install and highly reliable but it is essential that you read this manual thoroughly before attempting to use 4x4 Component-Audio Matrix Switcher.

SAFETY INFORMATION

1. To ensure the best results from this product, please read this manual and all other documentation before operating your equipment. Retain all documentation for future reference.
2. Follow all instructions printed on unit chassis for proper operation.
3. To reduce the risk of fire, do not spill water or other liquids into or on the unit, or operate the unit while standing in liquid.
4. Make sure power outlets conform to the power requirements listed on the back of the unit. Keep unit protected from rain, water and excessive moisture.
5. Do not attempt to clean the unit with chemical solvents or aerosol cleaners, as this may damage the unit. Dust with a clean dry cloth.
6. Do not use the unit if the electrical power cord is frayed or broken. The power supply cords should be routed so that they are not likely to be walked on or pinched by items placed upon or against them, paying particular attention to cords and plugs, convenience receptacles, and the point where they exit from the appliance.
7. Do not force switched or external connections in any way. They should all connect easily, without needing to be forced.
8. Always operate the unit with the AC ground wire connected to the electrical system ground. Precautions should be taken so that the means of grounding of a piece of equipment is not defeated.
9. AC voltage must be correct and the same as that printed on the rear of the unit. Damage caused by connection to improper AC voltage is not covered by any warranty.
10. Turn power off and disconnect unit from AC current before making connections.
11. Never hold a power switch in the “ON” position.
12. This unit should be installed in a cool dry place, away from sources of excessive heat, vibration, dust, moisture and cold. Do not use the unit near stoves, heat registers, radiators, or other heat producing devices.
13. Do not block fan intake or exhaust ports. Do not operate equipment on a surface or in an environment which may impede the normal flow of air around the unit, such as a bed, rug, carpet, or completely enclosed rack. If the unit is used in an extremely dusty or smoky environment, the unit should be periodically “blown free” of foreign dust and matter.
14. To reduce the risk of electric shock, do not remove the cover. There are no user serviceable parts inside. Refer all servicing to qualified service personnel. There are no user serviceable parts inside.
15. When moving the unit, disconnect input ports first, then remove the power cable; finally, disconnect the interconnecting cables to other devices.
16. Do not drive the inputs with a signal level greater than that required to drive equipment to full output.
17. The equipment power cord should be unplugged from the outlet when left unused for a long period of time.
18. Save the carton and packing material even if the equipment has arrived in good condition. Should you ever need to ship the unit, use only the original factory packing.
19. Service Information Equipment should be serviced by qualifier service personnel when:
    A. The power supply cord or the plug has been damaged.
    B. Objects have fallen, or liquid has been spilled into the equipment.
    C. The equipment has been exposed to rain
    D. The equipment does not appear to operate normally, or exhibits a marked change in performance
    E. The equipment has been dropped, or the enclosure damaged.

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INTRODUCTION

Congratulations on your purchase of one of the most innovative Component/Digital/Audio matrix switching products on the market Today. The SB-5644 is a true Matrix Routing Switcher for Component Video, Digital and Stereo Audio signals. It is an 4 individual Component inputs with 4 individual Component outputs. Because it is a matrix router, any input may be routed to any output; or the same input may be routed to all outputs or any combination. It completely eliminates the need to constantly move around audio and video input and output cables. The SB-5644 is useful for Matrix signals from AV source devices (such as: VCRs, Camcorders, Video Game Consoles, Video CDs, DVDs, Satellite Receivers, CAT5 Set Top Boxes, etc.) to AV destination devices (such as: LCD TV, HDTV, Plasma displays, Projectors, etc.). Selection of inputs is made via the Front Panel push buttons or an Infrared Remote Control unit or RS-232 control by computer.

PACKAGE CONTENTS

Check that you have the following components;

- SB-5644 Switcher
- IR Remote control
- 19 inch 1RU rack mount brackets
- RS-232 Software (All Windows Operating Systems)
- Users Guide
- AC/DC Adapter: 2VDC, Universal Type 50/60Hz, 100~230 VAC

SAFETY PRECAUTIONS

Please read all instructions before attempting to unpack, install or operate this equipment and before connecting the power supply. Please keep the following in mind as you unpack and install this equipment:

- Always follow basic safety precautions to reduce the risk of fire, electrical shock and injury to persons.
- To prevent fire or shock hazard, do not expose the unit to rain, moisture or install this product near water.
- Never spill liquid of any kind on or into this product.
- Never push an object of any kind into this product through any openings or empty slots in the unit, as you may damage parts inside the unit.
- Do not attach the power supply cabling to building surfaces.
- Use only the supplied power supply unit (PSU). Do not use the PSU if it is damaged.
- Do not allow anything to rest on the power cabling or allow any weight to be placed upon it or any person walk on it.
- To protect the unit from overheating, do not block any vents or openings in the unit housing that provide ventilation and allow for sufficient space for air to circulate around the unit.

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Version 1.3 JULY 2014

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FEATURES & SPECIFICATIONS

FEATURES

- Supports 4x inputs to 4x outputs Component Video (YPBPR) Matrix Switcher
- Input/Output signals via Component Video(YPBPR), Digital (PCM), Stereo Audio (AR/AL)
- Higher Video Bandwidth 325MB each path signals.
- Supported HDTV high definition resolutions 408p, 576i/p, 720p, 1080i/1080p
- Digital Audio (PCM) and Composite Video compliant
- Compatible with all Component Video devices, Plasma TV display and HDTV
- Supported RS-232 serial interface protocol commands list
- Control PC RS-232 Drive compatible with win-95/98/2000/xp
- Various User Interface controls:
  - Attached Window based control software for Desktop or NB control by RS-232 port
  - Manual controlled by Front Panel button
  - IR remote control
- Support desktop with Ear mount and 19 inch Rack mountable type panel
- Power supply DC12Volt, Universal Type Switch 100~230VAC, 50/60Hz

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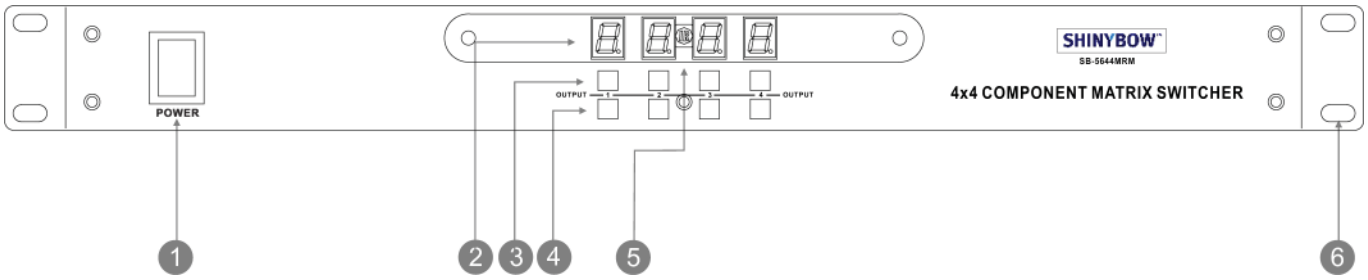
SPECIFICATIONS

- **Type of Switcher:** 4 in To 4 out, Component Video-Digital-Audio Matrix Switcher
- **I/O Signals:**
  - Component Video (YPBPR) 0.5~1.0Vpp, DDC 5Vpp
  - Digital Audio (PCM), Via 1x RCA connector
  - Stereo Audio (AR/AL), Via 2x RCA connector(Red/white)
- **Video Bandwidth:** 325MHz (-3db), 200mVp-p
- **Video Supported:** Higher resolution formats 480i/p, 720p & 1080i/p
- **Audio Supported:** Digital Audio (PCM) and Stereo Audio (AR/AL)
- **Low all Hostile Crosstalk:** -83 db@5MHz
- **Controls:** IR remote, Select buttons on the front panel & RS-232
- **PC RS-232 Control:** RS-232 interface serial via DRV on a PC
- **Gain Control:** 60MHz 0.1 db gain flatness
- **Chassis Material:** Metial (T=1mm)
- **Safety Approvals:** CE, FCC, RoHS(2002/95/EC)
- **Dimensions (LxWxH):** 19 x 7.87 x 1.73 in (482mm x 200mm x 44mm)
- **Power Supply:** DC12V / 1.25A (consumption 0.8A Max) Use Universal Switch Type 50/60Hz,100~230 VAC
- **Net Weight:** 2.45 Kgs / 4.08 lbs

As product improvements are continuous, specifications are subject to change without notice.

FRONT PANEL

FRONT PANEL



1. POWER SWITCH

The power switch turns the unit on and off. The LED will illuminate red to indicate that the switcher is ON and is receiving power

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2. OUTPUT SOURCES STATUS LED DISPLAY

Output channel 1 to 4 show from LED display illuminates red to indicate that a video source is present on that input.

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3. UP SELECT INPUT SOURCE BUTTONS

Setup the input sources 1 ~ 4 channels

---

4. DOWN SELECT INPUT SOURCES

Setup the input sources 1 ~ 4 channels

---

5. IR SENSOR

The IR sensor receives IR commands from the supplied remote controller.

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6. 19 INCH EAR MOUNT PAIR

19 inch 1RU(1D) high case Ear Mount pair Part number : 1U-440L

OPERATING THE UNIT

Once you have connected the SB-5644 as described above, you must be certain that the input are being fed appropriate signals and are not suffering from signal loss due to cabling problems or problems with the source device.

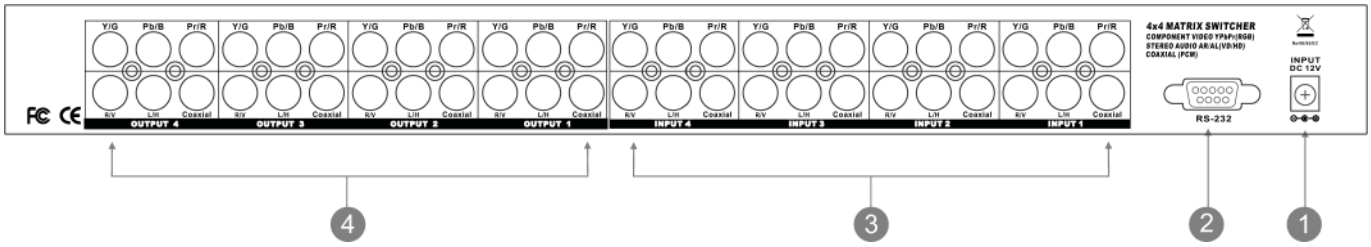
If the input signals to the SB-5644 are appropriate, switch the power switch to <ON> and you should see and hear the signals on the devices you have connected to the various output connectors of the SB-5644.

POWER AND CONNECTIONS

This unit is not disconnected from the AC power source as long as it is connected to the wall outlet. The off state for this unit is called standby mode. In standby mode the unit is designed to consume a reduced quantity of power compared to normal operating modes.

When not using the unit for a long period of time. Insure that the AC power cord is disconnected from the wall outlet.
The AC wall outlet should be installed near to the unit and be easily accessible.
Do not plug in or attempt to operate an obviously damaged unit.

REAR PANEL



1. DC POWER INLET

The SB-5644 is fitted with a DC power plug-park input connector. Please ensure that the plug-park used is of an approved type and is of sufficient current carrying capacity with the correct voltage and connector polarity. 12Volt DC power supply 1.25A Max.

Power Jack:
DC Jack - Inner OD ⦰ 2.1mm (+)
Outside OD ⦰ 5.5mm (GND)
Power input - 12VDC, 1.25A

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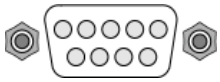
2. RS-232 CONNECTION

RS-232 control port to allow for interfacing to a PC, Such as a computer or touch panel control, to the SB-5644 switcher via this DB-9pin Female connector for serial RS-232 control.



Remote port :
DB-9pin Female connector

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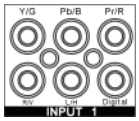
3. INPUTS-1~4 COMPONENT-DIGITAL-AUDIO

Connect a signal source of Component Video (YPBPR)/ digital Audio (PCM) /Stereo Audio devise to 4x4 switcher.

Input 1~4 port source signals :
- Component Video (YPBPR), 3x RCA Connectors
- Digital Audio (PCM), 1x RCA Connector
- Stereo Audio (AR/AL), 2x RCA Connectors



Component Video (YPBPR) Via 3x RCAs
Digital Audio (PCM) Via 1x RCA connector
Stereo Audio (AR/AL) Via 2x RCA connectors
Note: With 6x RCA female connectors

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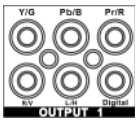
4. OUTPUTS-1~ 4 COMPONENT-DIGITAL-AUDIO

Connect a signal of Component Video(YPBPR),digital video & audio direct to Female RCA connector. This connector supports component video, digital video & audio to HDTV display device.

Output 1~4 display port signals :
- Component Video (YPBPR), 3x RCA Connectors
- Digital Audio (PCM), 1x RCA Connector
- Stereo Audio (AR/AL), 2x RCA Connectors



Component Video (YPBPR) Via 3x RCAs
Digital Audio (PCM) Via 1x RCA connector
Stereo Audio (AR/AL) Via 2x RCA connectors
Note: With 6x RCA female connectors

CONNECTING THE HARDWARE

Please study the panel drawings below and become familiar with the signal input-output, Power requirements plus any controls present.

Before using the SB-5644, please take the time to make certain that the device you wish to connect to its inputs is functioning properly in all respects. Verify that the video and audio signals are present and are being displayed properly on a suitable device.

If all is well connect the appropriate cables between the output of the device you wish to distribute to output(s) of the SB-5644 to the carious devices you wish to feed a signal to. Lastly, connect the AC to DC adaptor, connect the DC connector to the SB-5644 first and then plug the adaptor into a functional AC outlet.

REMOTE CONTROL

Before making any connections to the SB-5644. Observe the following:

> Ensure the mains voltage supply matches the label on the supplied plug- Pack (+/- 10%)

> Ensure that the power switch is OFF

> Ensure that all system grounds (earth) are connected to a common point.

> Avoid powering equipment within a system from multiple power sources that may be separated by large distances

> Connect all audio video sources and destination equipment

> Power up all source and destination audio-visual sources

> For each destination output select the appropriate input source by using the front panel input 1~8 select buttons. The supplied IR remote control. Or through the RS-232 serial communications port.

> Upon power up the switcher will return to its last used setting before Powered down.

REMOTE CONTROL

1. SWITCH POWER ON or OFF:

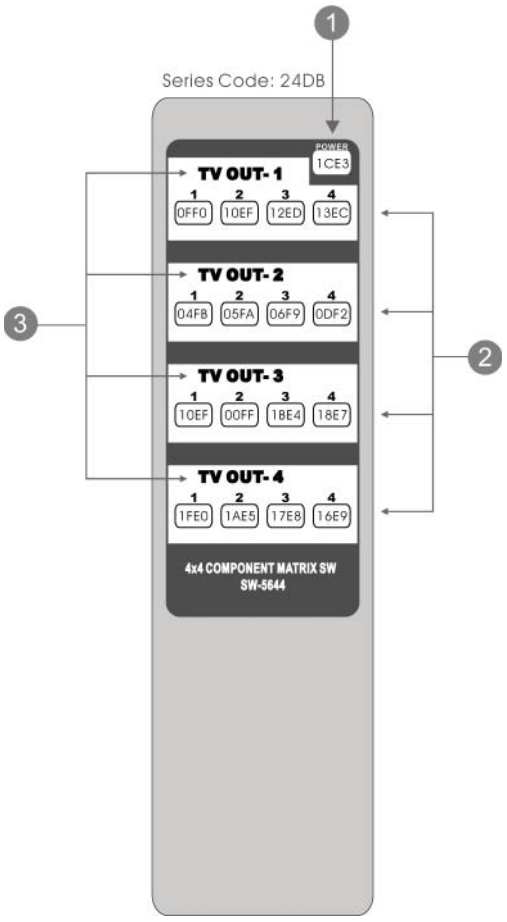
Controller with a power ON and OFF

2. OUTPUT 1~ 4 : OUTPUT TO TV DISPLAYS:

Output -1 : TV-1 Component Video (YPBPR) HDTV Display
Output -2 : TV-2 Component Video (YPBPR) HDTV Display
Output -3 : TV-3 Component Video (YPBPR) HDTV Display
Output -4 : TV-4 Component Video (YPBPR) HDTV Display

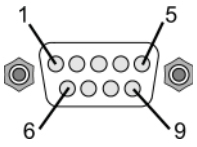
3. INPUT 1~ 4 : INPUT VIDEO SOURCES SELECTIONS:

Input -1 : AV-1 Component Video (YPBPR) Signal source device
Input -2 : AV-2 Component Video (YPBPR) Signal source device
Input -3 : AV-3 Component Video (YPBPR) Signal source device
Input -4 : AV-4 Component Video (YPBPR) Signal source device



RS-232 SERIAL INTERFACE

RS-232 SERIAL INTERFACE CONNECT A PC OR CONTROL SYSTEM



RS-232 SERIAL INTERFACE

Pin	RS-232	Definition
1	--------	Not used
2	TX	Transmitter
3	RX	Receiver
4	--------	Not used
5	GND	Ground
6	--------	Not used
7	--------	Not used
8	--------	Not used
9	--------	Not used

RS-232

The switcher can be controlled via the RS-232 serial control port to allow for interfacing to a PC or similar third party control system.

The serial communication parameters are 9600 baud, 8 bit, No Parity and 1 stop bit - this is often referred to as 9600 8N1. When the unit recognizes a complete command it will perform the requested action - there is no delimiter character required.

The unit does not send out a message when a value is changed from the front panel or by IR control. If the unit needs to be controlled via the front panel in addition to the RS-232 control, you should regularly poll the unit status to ensure the control system accurately reflects the current settings.

PROTOCOL COMMANDS

To Switch Inputs to Outputs

SBI0XO0Y - Where X is Output Number (1-4) and Y is Number (1-4)

Unit will respond with

SBUD0XOY - Where X is Input Number (1-4) and Y is Output Number (1-4)

Example : Send Input 4 to Output 3

SBI04O03 - Send
SBUD04O3 - Rcvd

RS-232 SERIAL COMMANDS

MORE STUFF FOR SB-5644

Note: Turning the unit System Power Off over RS-232 will distinguish the LED display leaving only the Power Switch LED on. The Video and Audio outputs will also mute. While the unit is turned off by RS-232 it will continue to accept and act upon switching commands. For example, if the unit is in the off mode (via RS-232) and you send a command to switch an input to an output, that route will complete and the video and audio will now appear on that channel only. The front panel LED for that particular output will also show the input selected (for that single output channel only). The remaining LED's will remain off and video and audio outputs muted. The unit will still return status and change messages in response to commands sent while in Power Off state. A hard reset command (SBALLRST) will return the unit to normal operation and also unlock the front panel

Power Off mode.

SBSYSMOF - Put system into Standby (Soft Power Off)

SBSYSMON - Bring unit out of Standby (Soft Power On)

Unit will respond with

SBALOFAK - Unit is in Standby

SBALONAK - Unit is no longer in Standby

Example: Put Unit in Standby (Soft Power)

SBSYSMOF -Send

SBALOFAK -Rcvd

FRONT PANEL LOCK

Note: Hard resetting the unit will unlock the Front Panel controls.

SBSYSMLK - When front panel is locked, changes can only be made by RS-232

SBSYSMUK - Front Panel Unlock

Unit will respond with

SBSYSLOK - Front Panel has been Locked

SBSYSULK - Front Panel has been Unlocked

Example: Lock Front Panel Buttons

SBSYSMLK -Send

SBSYSLOK -Rcvd

UNIT RESET

SBALLRST - Reset every output to Input 1

Unit will respond with

SBRSTACK - Unit has reset each Output to Input 1

Example: Reset all outputs to Input 1

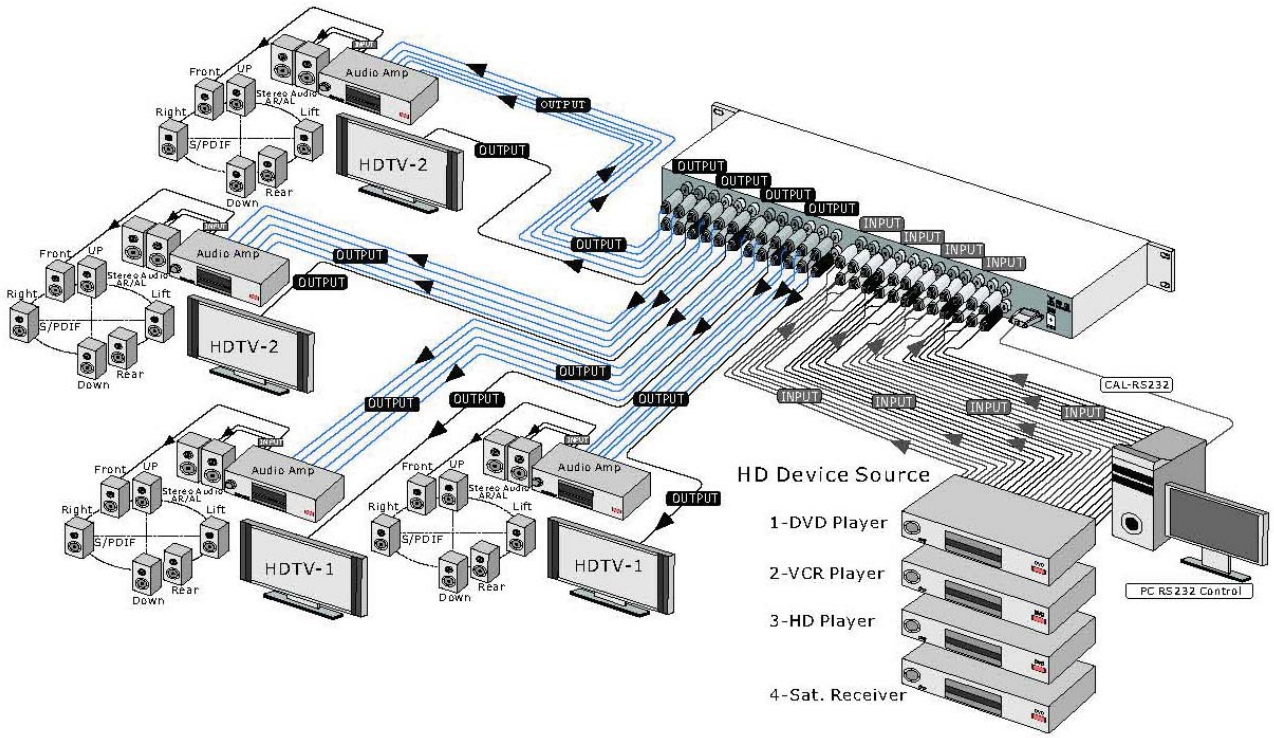
SBALLRST -Send

SBRSTACK -Rcvd

TYPICAL APPLICATION

SHINYBOW SB-5644

4x Component sources to 4x Component Output Matrix Switcher



INSTALLING

CONTROL PORTS :

1. IR REMOTE - IR Remote Controller
2. RS-232 Interface - RS-232 interface system

INPUTS 1 ~ 8 PORT HD SOURCE SIGNALS :

COMPONENT VIDEO - Component Video (YPBPR), connector with RCA
DIGITAL - Digital Audio (PCB), connector with RCA
AUDIO - Stereo Audio (AR/AL), connector with RCA

OUTPUT 1 ~ 4 PORT HDTV DISPLAY SIGNALS :

COMPONENT VIDEO - Component Video (YPBPR), connector with RCA
DIGITAL - Digital Audio (PCB), connector with RCA
AUDIO - Stereo Audio (AR/AL), connector with RCA

SB-5644 SUPPORT COMPONENT FOUR INPUTS MATRIX TO FOUR SWITCH OUTPUTS
SUPPORT CONTROL IR & RS 232 INTERFACE SYSTEM PORTS.

LIMITED WARRANTY

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